

IN THE SPECIFICATION:

Page 1

Before line 1 of the specification, please insert the following new paragraph:

This Non-provisional application claims priority under 35 U.S.C. § 119(a) on Patent Application No(s). 2003-116654 filed in Japan on April 22, 2003, the entire contents of which are hereby incorporated by reference.

Page 1, second paragraph, please amend as follows:

Generally, a liquid crystal panel is formed by sealing a liquid crystal material in a space in a liquid crystal cell formed between facing surfaces of two glass substrates and ~~is manufactured by~~ may include sticking a polarizer to an outer surface of each of the two glass substrates in the liquid crystal panel.

Page 2, first full paragraph, please amend as follows:

When the work of sticking the polarizer to the liquid crystal panel is performed manually, the work efficiency is extremely low, and variations occur in the finished ~~state of the~~ sticking product. Consequently, an apparatus for automatically sticking a polarizer to a liquid crystal panel has already been proposed.

Page 2, second full paragraph, please amend as follows:

A conventional apparatus for automatically performing the sticking operation has at least two stages, ~~of~~ a liquid crystal panel receiving mechanism and an sticking mechanism, ~~and one~~ A table reciprocates between the two stages to stick the polarizer to the liquid crystal panel while peeling the separate sheet.

Page 2, third full paragraph bridging pages 2 and 3, please amend as follows:

A work process in the conventional sticking apparatus having such a configuration includes the following steps.

(1) In the liquid crystal panel receiving mechanism, the liquid crystal panel is set on the table and is simultaneously positioned.

(2) The table comes to a predetermined position in the sticking mechanism.

(3) ~~On the other hand,~~ A polarizer is supplied onto an adhesive belt of the sticking mechanism and is adhered on an adhesive surface of the adhesive belt.

(4) By feeding the adhesive belt, the polarizer is guided by a wedge-shaped guide member and moves obliquely while a separate sheet is peeled by using a guide roller as a base point.

(5) The tip of the polarizer from which the separate sheet is being peeled is pressed against the top surface of the liquid crystal panel by a press roller and the table is moved back, thereby sticking the polarizer onto the liquid crystal panel.

(6) The liquid crystal panel on which the polarizer is stuck is taken from the table (refer to, for example, ~~Patent Document 1~~ Japanese Unexamined Patent Publication No. 8-50290).

Page 3, first full paragraph:

As another conventional apparatus for performing automatic sticking, an apparatus having a table on which a liquid crystal panel is vacuum held and a table on which a polarizer is vacuum held is proposed. The tables are moved among a supply stage, a separate sheet peeling stage, a sticking stage, and the like, and a sticking ~~work~~ process is automatically ~~done~~ carried out (refer to, for example, ~~Patent Document 2~~ Japanese Unexamined Patent Publication No. 2002-23151).

Page 3, second and third paragraphs, please delete in their entirety:

~~Patent Document 1: Japanese Unexamined Patent Publication No. 8-50290 (pages 3 and 4, FIGS.1 to 6)~~

~~Patent Document 2: Japanese Unexamined Patent Publication No. 2002-23151 (FIGS. 1 to 4)~~

Page 4, third full paragraph, please amend as follows:

Further, at the time of sticking the polarizer and the liquid crystal panel, as shown in FIG. 2 of Patent Japanese Unexamined Publication No. 8-50290 ~~Document 1~~, a wedge-shaped guide member is interposed between the liquid crystal panel and the polarizer.

Page 4, fourth full paragraph, please amend as follows:

As understood from FIG. 2 of ~~Patent Document 1~~ Publication No. 8-50290, a considerably large space is necessary between the liquid crystal panel and the tip of the polarizer.

Page 5, the last paragraph bridging pages 5 and 6, please amend as follows:

In the conventional apparatus, however, the polarizer is simply held by being adhered by the adhesive belt of the material such as Scotch tape. The polarizer is moved by travel of the adhesive belt. Moreover, the separate film is peeled at the tip of the guide member, and the tip portion of the polarizer is pressed so as to be stuck to the liquid crystal panel. Consequently, even a slight ~~meander~~ deviation from the intended path of travel of the adhesive belt causes a positional deviation in the polarizer. As a result, an adverse influence

is exerted on sticking precision. Particularly, in the case of a large polarizer, there is limitation in such a moving method.

Page 6, the second full paragraph, please amend as follows:

Further, for the same reasons, the latter conventional apparatus is ~~not~~ also not suitable for sticking of a polarizer to a large liquid crystal panel and also has a problem of low work efficiency.

Page 6, the last paragraph bridging pages 6 and 7, please amend as follows:

~~An object~~ A feature of the present invention is, therefore, ~~to provide provision of~~ a method and apparatus for sticking a polarizer to a liquid crystal panel with high precision ~~realizing operating within a smaller space_ and compactness by employing A~~ feature of the invention is use of a stageless (tableless) structure in which a polarizer sticking unit is provided on a conveyance line of a liquid crystal panel₇. The invention is suitable for sticking of a polarizer particularly to a large liquid crystal panel, and realizing extremely high work efficiency, improved throughput, and prevention of occurrence of air bubbles at the time of sticking of a polarizer to a liquid crystal panel.

Page 7, The first full paragraph, please amend as follows:

~~To solve the problems as described above, the~~ The
invention ~~of claim 1~~ relates to a method of sticking a polarizer
to a substrate, wherein, while moving a substrate in one
direction along a conveyance line from a carry-in side to a
carry-out side, a separate sheet of a polarizer is peeled to
expose an adhesive layer, and the polarizer is stuck to the
substrate.

Page 7, the third full paragraph, please amend as follows:

~~The invention of claim 2 employs, in~~ Another feature of the
invention ~~of claim 1, the configuration in which the~~ is that a
polarizer is stuck to the substrate in a state where a
horizontal surface parallel with the movement direction of the
substrate, of a mounting surface of the polarizer is tilted.

Page 7, the fourth full paragraph, please amend as follows:

~~The invention of claim 3 employs, in~~ Another feature of the
invention ~~of claim 1 or 2, includes~~ a configuration in which at
the time of sticking a polarizer to the substrate, the polarizer
is stuck with an end portion of the polarizer held.

Page 7, the fifth paragraph, bridging pages 7 and 8, please amend as follows:

The invention ~~of claim 4 relates to~~ may further include an apparatus for sticking a polarizer to a substrate, including: a conveyance line for moving a substrate in one direction from a carry-in side to a carry-out side; a polarizer sticking unit for holding a polarizer; and a peel unit for peeling a separate sheet which is preliminarily adhered on a surface of the polarizer held, characterized in that the polarizer sticking unit has a sticking roller for pressing the polarizer against the substrate in a sticking position which is set in the conveyance line to thereby stick the polarizer onto the substrate.

Page 8, please amend the first full paragraph as follows:

The invention of ~~claim 5 employs, in the invention of claim 4,~~ may also include a configuration in which a mechanism for holding an end portion of the polarizer while moving so as to follow the movement of the polarizer is provided.

Page 8, the second paragraph, please amend as follows:

~~The invention of claim 6 employs, in the invention of claim 4 or 5,~~ A further feature of the invention is a configuration in which the polarizer sticking unit has a mounting surface tilting mechanism for tilting a horizontal surface parallel with the

movement direction of the substrate, of the mounting surface of the polarizer at the time of sticking the polarizer to the substrate.

Page 8, the third paragraph, please amend as follows:

~~The invention of claim 7 employs, in~~ Yet another possible feature of the invention of any of claims 4 to 6, is a configuration in which the sticking roller is rotatably supported by a roller supporting member, and the roller supporting member is supported in an elevation box which is elevated by a driver via a cushioning material.

Page 8, the fourth paragraph, please amend as follows:

~~The invention of claim 8 employs, in the invention of any of claims 4 to 7,~~ may also include a configuration in which a press roller mechanism for sandwiching the substrate in corporation with the sticking roller is provided in a position opposite to the sticking roller.

Page 9, the sixth paragraph, please amend as follows:

FIG. 6 is a partly-cutaway right side view of the apparatus;

Page 11, the first full paragraph, please amend as follows:

The polarizer sticking unit 5 is constructed by mounting an elevating frame 9 on a fixed frame 8. ~~of a~~ Frame 9 has both side-surfaces open ~~type which~~ and is fixed to the support stage body 1. ~~and providing, on~~ The apparatus includes a tilting base 10 disposed on the top surface of the elevating frame 9, a mounting member 11 serving a surface on which the polarizer B is mounted, a sticking roller 12 which is vertically movable in a position below the tip of the mounting member 11, a first vacuum holder 13 (Fig. 3) which rises and swings in a position of the tip portion of the mounting member 11, a second vacuum holder 14 provided at the tip portion of the mounting member 11, and a third vacuum holder 15 positioned in some midpoint of the mounting member 11.

Page 11, the second paragraph, please amend as follows:

The elevating frame 9 is formed so that its both side surfaces which fit on the fixed frame 8 are open. The elevating frame 9 is movable in the vertical direction along a vertical ~~perpendicular~~ guide rail 16 and a vertical ~~perpendicular~~ slider 17 as guides. A ball nut 20 of a ball screw 19 interlocked with a motor 18 in the fixed frame 8 is coupled to the elevating frame 9, and the elevating frame 9 moves vertically by the driving of the motor 18.